CONFERENCE REPORT

World Federation of Chiropractic/Consortium of European Chiropractic Educators/Association of Chiropractic Colleges Education Conference 2010

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This year's International Education Conference, organized by the Association of Chiropractic Colleges (ACC), Consortium of European Chiropractic Educators (CECE), and World Federation of Chiropractic (WFC), was hosted by the Royal University Center Maria Cristina in San Lorenzo de El Escorial, Madrid, Spain (RCU Maria Cristina). RCU Maria Cristina was chosen because the organizers wanted a venue in Europe and because this European university has a chiropractic educational program and had outstanding facilities to house delegates and the conference.

CLINICAL TRAINING IN CHIROPRACTIC EDUCATION: MEETING THE DEMANDS OF A NEW ERA

Are graduates well prepared for independent clinical practice? Are they prepared for the evolving health care world, characterized by collaboration, integration, evidence-informed best practices, patient safety, accountability, and a variety of practice environments and career choices? Do they know how to manage lifelong learning and apply scholarship to practice? How should chiropractic educators and organizations address these challenges?[1]

The subject matter of the conference was undergraduate and postgraduate chiropractic clinical training, including faculty and clinician scholarship, and current international developments (Table 1). The conference addressed the above questions, which are increasingly occupying the attention of chiropractic educators, other leaders in the profession, and society. (*Note*: Within the European educational environment, "undergraduate" chiropractic training means the professional program leading to the chiropractic degree, typically referred to as the Doctor of Chiropractic Program in the United States.)

Nineteen lecturers were invited to introduce the key subjects (Table 2). Thirty-one short presentations (10 minutes) from speakers had been selected by peer review from individuals responding to the Call for Papers: 16 from North America (United States, 13; Canada, 3), 10 from Europe, 4 from Australia, and 1 from Brazil. There was ample opportunity for discussion at the conference through the use of panels and audience participation. As at previous education conferences, attendees developed final session consensus statements.

ATTENDEES

This conference was a technical meeting on chiropractic education, but addressed an area of central interest to the whole profession. It dealt with clinical training not only at the undergraduate level but also following graduation and in professional continuing development. It was, therefore, of interest not only to leaders and faculty from chiropractic institutions and other educational organizations but also representatives of chiropractic associations and those interested in the impact of continuing professional

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Table 1. Subjects presented at the Education Conference 2010 in Madrid

Undergraduate Clinical Training (14 papers)	Postgraduate Clinical Training (8 papers)	Faculty and Clinical Training (9 papers)
• Competencies and priorities • Methods • Settings • Instilling habits of lifelong learning • Interprofessional education, collaboration, and practice • Assessment of clinical competencies	• The postgraduate clinical year • Continuing professional development: priorities, methods, and role in maintaining clinical competencies • Specialty training: preliminary review of its current status in chiropractic	• Faculty development, challenges, and solutions concerning teacher training

Table 2. Invited key subjects speakers

Lecturers	Key Subject
Brimhall J.	Introduction: Review of Clinical Competencies Required by CCEs
Fujikawa R.	Core Clinical Training and Competencies for All Chiropractic Students Today
Nook B.	Core Clinical Training and Competencies for All Chiropractic Students Today
Byfield N.	Core Clinical Training and Competencies for All Chiropractic Students Today
Wiles M.	Core Clinical Training and Competencies for All Chiropractic Students Today
Tibbles A.	Undergraduate Clinical Training: Methods; Introduction and Overview
Dougherty P.	Undergraduate Clinical Training: Settings; Introduction and Overview
Bolton J.	Undergraduate Clinical Training: Instilling Habits of Lifelong Learning; Introduction and Overview
Lauridsen HH	The Importance, Benefits, and Challenges of Interdisciplinary Clinical Training in a University Environment: A Case Example from Denmark
Kopansky-Giles D.	New Government and University Requirements for Interprofessional Education in Canada and the Significance of This for the Chiropractic Profession and Patients
Mrozek J.	Undergraduate Clinical Training: Assessment of Clinical Competencies; Introduction and Overview
Wangler M.	EAC Model Curriculum for a Graduate Education Program Among 19 ECU Member Nations
Korporaal Ch.	The Postgraduate Clinical Year in South Africa
Meeker W.	Clinical Education: Faculty Development – Teacher Training; Perspective from a Large Established Program
Cleveland III C.	Clinical Education: Faculty Development – Teacher Training; Perspective from a Large Established Program
Moss M.	Clinical Education: Faculty Development – Teacher Training,-Perspective from a Large Established Program
Sanchez J.	Perspective from a Small Established Program
Yelverton Ch.	Clinical Education: Faculty Development – Teacher Training; Perspective from a Small Established Program – Language English
Bolton J.	Continuing Professional Development: Priorities, Methods, and Role in Maintaining Clinical Competencies
Thiel H.	A European Model for Reporting and Learning from Adverse Events
Lothe L.	Proposals for Specialty Training in Europe
Raven T.	Who Reviews the Reviewer?

development on clinical practice. There were 110 registrants from 26 education programs in 12 countries.

UNDERGRADUATE CLINICAL TRAINING

How many core clinical competencies can be taught and mastered at chiropractic institutions and what are they? Joe Brimhall, President of Councils on Chiropractic Education International (CCEI), reviewed clinical competencies required by CCEs. Dr. Brimhall states that CCEI neither regulates the scope of practice nor defines the philosophy or identity of the chiropractic profession. Its role is the promotion of academic excellence and assurance of the quality of chiropractic education. Four presentations followed (Ricardo Fujikawa, Brian Nook, David Byfield, and Martin Wiles, Table 2) and panel and audience discussion enlightened core clinical training and competencies in addressing the role of chiropractors in meeting societal needs. These initial presentations outlined a number of issues and challenges related to the rapid evolution of chiropractic education over the past four decades. All four speakers, as well as Dr. Brimhall, the key speaker, spoke of the importance of educational outcomes and assessments of these outcomes. A common theme was the need for both increased quality and quantity of clinical training opportunities, particularly early clinical experiences.

METHODS

An overview of the roles of various methods of clinical training was presented by Anthony Tibbles (Table 2). He described the importance of early clinical experiences (typically an "observership") as a basis for the clinical year. Student engagement, rather than passive attendance, is required during this early phase of the clinical year or years. The mentorship model is the oldest and most common in clinical training. In this model, students are able to develop an important relationship with their mentor who serves as a role model. Dr. Tibbles also discussed the growing use of technology in clinical education, including virtual worlds and mannequin-based simulation. Finally, the importance of clinical rounds, so commonly seen in medical education but frequently underutilized in chiropractic education, was mentioned. The use of paper cases was demonstrated for both self-study and within a classroom to enhance diagnostic and clinical reasoning skills or for the discussion of patient management (Robyn Beirman, Table 3).

Second Life, a virtual world most commonly used for educational purposes, was shown to be a feasible method for chiropractic education, although the technology can be complex (Glori Hinck, Table 3).

A hospital-based observational program at the University of Glamorgan, United Kingdom, including a first and second pilot, had the aim of establishing a long-term working relationship with the hospital, trust between members of the professional staff, and an additional learning environment for final-year student clinicians. It prepares graduates to understand a modern integrated health care system where health professionals work together to provide high-standard health care. Establishing strategic external partnerships, engaging in collaborative research projects, and raising the profile of the university and its undergraduate programs are some of many benefits to the institution (David Byfield, Table 3).

SETTINGS

Paul Dougherty (Table 2), an associate professor at New York Chiropractic College (NYCC), Seneca Falls, New York, reviewed the need for clinical training of chiropractic students in settings with complex patients. He described experiences in various hospital settings that are available to students at NYCC. These include Monroe Community Hospital, a geriatric care center, and a number of Veteran's Affairs clinics where students are able to see patients with complex physical and psychological comorbidities, including combat-related spinal cord and brain trauma. While there are many challenges to setting up clinical curricula such as these, it is crucial that chiropractic education evolves to include experiences in settings with a complex patient base.

Clinical simulation is gaining widespread acceptance as an important tool in undergraduate education and continuing professional development of health care professionals. Human Patient Simulator Mannequins have become an integral component of the training of nurses in the Faculty of Health, Sport and Science at the University of Glamorgan, providing variety and flexibility when preparing students for their practical placement on the hospital wards. A pilot for the training of chiropractic student clinicians was conducted at Glamorgan to expose

Table 3. Presentations on undergraduate education

Undergraduate Clinical Training: Methods	Undergraduate Clinical Training: Settings	Undergraduate Clinical Training: Instilling Habits of Lifelong Learning	Undergraduate Clinical Training: Assessment of Clinical Competencies
• Robyn Beirman. The Use of Paper Cases in Teaching Clinical Competency: Why, What and Wherefore. Macquarie University, Sydney, Australia • Glori Hinck. The Use of a Virtual World for Chiropractic Education: Feasible or Foolish? Northwestern Health Sciences University, Bloomington, MN • David Byfield. Chiropractic Clinical Training: A Hospital-Based Observational Program. University of Glamorgan, UK	• David Byfield. Clinical Simulation: A Viable Addition to Chiropractic Undergraduate Clinical Education. University of Glamorgan, UK • Brian Nook and Vincenzo Cascioli. Clinical Outreach Program. Murdoch University, Australia • Susan King and David Byfield. Exemplary Practice Clinical Tutorials –A Professionally Lead Clinical Learning Experience for Chiropractic Student Clinicians. University of Glamorgan, UK	• Michele Maiers and Roni Evans. Information Mastery: An Essential Tool for Lifelong Learning. Northwestern Health Sciences University, Bloomington, MN • Kathryn Hoiriis and Brian McAulay. A Summary of Pedagogical Practices. Lifelong Learning. Life University College of Chiropractic, Marietta, GA • Peter McCarthy. Putting the Clinical into Clinical Pharmacology Education. University of Glamorgan, UK • Janet Tapper. Web 2.0: Tools for Lifelong Learning. University of Western States, Portland, OR	• Rocky Comberiati. Portfolio Assessment and Reciprocal Teaching of Clinical Training in the Skills Classroom. Macquarie University, Sydney, Australia • Ana Paula Facchinato, Camila Benedicto, Ana Quilici, and Leandro Giavarotti. The Objective Structures Clinical Examination Applied to Chiropractic Students Before the Internship and after Six Months of Professional Practice. University • Anhembi Morumbi University, Sãn Paulo, Brazil • John Hyland. Summative Assessment of Clinical Competencies: Methods and Rationales of NBCE/IBCE. National Board of Chiropractic Examiners (NBCE), Greeley, CO • Paul Osterbauer and Katie Burns Ryan. Competence of Chiropractic Students Evaluating a Complex Case Using Standardized Geriatric Patients. Northwestern Health Sciences University, Bloomington, MN

them to a simulated environment and engage them in a self-assessment exercise so that each student group observes and assesses various competencies during the simulated case presentation. Feedback from the students regarding the utility of a simulated clinical environment drawing parallels to their outpatient clinic experience was very positive (David Byfield, Table 3).

The Murdoch University School of Chiropractic and Sports Science in Perth, Australia, initiated an intensive community service campaign involving numerous outreach programs and sporting events. This outreach program fulfilled a segment of the school's strategic plan for community service and provided opportunities for students to expand their patient case mix. It also demonstrated to the students the importance of giving back to the community. Locations for clinics have included community centers, school classrooms, sports fields, sport centers, and music festival grounds. Advantages of community outreach programs include helping the community, direct access to disadvantaged population groups, exposure to cases that often involve complicated psychosocial issues and clinical challenges, additional sources of patient exposure, and team building. Challenges included resources (financial, staff, time, and transportation) and conflict with a business approach to running the school's outpatient clinic (Brian Nook and Vincenzo Cascioli, Table 3).

Exemplary Practice Clinical Tutorials are an innovative teaching environment for final-year chiropractic students. Clinical training is currently provided through a program conducted at the University of Glamorgan's Welsh Institute of Chiropractic Out-Patient Clinic, where student clinicians are assigned a patient list and manage patients under supervision. The tutorials are held in a specialized skills room with a viewing mirror connected to a lecture theater. Students observe the interaction between a qualified chiropractor and a patient through the initial history interview, the clinical examination, the discussion relating to the clinical findings, and the proposed plan of management, concluding with the initial treatment session. Feedback from students, professional staff, and participating patients has been extremely positive (Susan King, Table 3).

INSTILLING HABITS OF LIFELONG LEARNING

Jennifer Bolton (Table 2), Director of Research & Graduate Studies at the Anglo-European College of Chiropractic, United Kingdom, reviewed competencies in performing research, reading the scientific literature, understanding best practices including reporting on patient safety, and adopting habits of lifelong learning as this has an impact on clinical competencies and practice. She described the very important role of reflection, and developing the capacity of reflection, in the lifelong learning process. Chiropractic education must include the development of self-reflection skills and portfolio developments because these are crucial professional requirements, not only as an expectation of today's health providers, but also increasingly as a legal requirement for licensure to practice. Reflective practice, learning from experiences, must include written reflection, feedback, discussion, and then actions to improve.

Information mastery (IM) is a concept developed to guide busy clinicians through the task of prioritizing and effectively locating useful research information and to make evidence-informed best practices realistic. Dr. Michele Maiers reported on the experience at Northwestern Health Sciences University, Bloomington, Minnesota, in developing and teaching a course on IM, considered to be foundational to the practice of evidence-based health care (Michelle Maiers and Roni Evans, Table 3).

A literature search was done and presented to show best practices in developing habits of lifelong learning using a library catalog, GALILEO, PubMed, and Index to Chiropractic Literature (Kathryn Hoiriis and Brian McAulay, Table 3).

Limited prescription rights, a professional interest in prescribing some forms of medication, and an increasing number of chiropractic patients presenting with a history of medication use, and the identification of medication-related adverse reactions led the Welsh Institute of Chiropractic, University of Glamorgan, to introduce two initiatives in the final clinical year: the incorporation of dedicated case review time allocated for students to present to a trained pharmacologist and developing student-generated research projects centered around monitoring changes in medication use by the patients during the period of chiropractic management. Initial feedback appears to indicate a greater appreciation and recognition by the final-year students of the potential benefits of accessing and using detailed information about the patient's medications in the routine monitoring of patient health status (Peter McCarthy, Table 3).

Janet Tapper of University of Western States, Portland, Oregon, described the development of a workshop, entitled Web 2.0 Tools for Lifelong Learning, designed with three parameters in mind: timing, relevancy, and practicality. The major goal of this 1-hour workshop is to ensure that students have the information literacy skills and technological awareness required to be lifelong learners as well as seek out evidence when making clinical decisions (Janet Tapper, Table 3). The format is "at a rapid pace and progresses through a set of practical, hands-on activities on the web." It was suggested that programs such as this will become the standard as chiropractic education adapts to the urgent need to include lifelong learning skills.

ASSESSMENT OF CLINICAL COMPETENCIES

John Mrozek (Table 2), Dean of Texas Chiropractic College, Pasadena, Texas, presented an overview of methods for assessing clinical competence. He introduced the topic with an introduction to the fundamentals of assessment including concepts such as formative and summative assessment, and the importance of reliability, validity, and fairness of assessment methods. Six assessment methods were described ranging from multiple-choice questions to objective structured clinical evaluations (OSCEs). Chiropractic educators need to remain abreast of best practices in clinical assessment as new methods are developed and existing methods are studied and tested.

A pilot study has been developed at Macquarie University in Sydney, Australia, to evaluate the use of portfolio assessment and reciprocal teaching in the pedagogy of chiropractic skills. Methods include self-study, small group peer teaching, large group presentation and discussion, feedback, and written reflection-stimulated meta-cognition and learning (Rocky Comberiati, Table 3).

Chiropractic education at the Anhembi Morumbi University in São Paulo, Brazil, lasts 4 years and 6 months, a 5000-hour curriculum, with 1000 hours of internship. Results were presented (Ana Paula Facchinato et al., Table 3).

To protect the public's health and for other regulatory purposes, every health professional's competency to practice must be evaluated. This is best accomplished in an appropriately designed high-stakes, pass–fail examination that includes both written and performance assessments. Two questions (ie, "how to test" and "what to test") were presented and discussed in respect to the National Board of Chiropractic Examiners. There should be a strong link between assessment, educational content, and patients seen in clinical practice (John Hyland, Table 3).

Effective communication skills identified in institutional learning objectives are a high priority to prepare chiropractors for the demands of care associated with an aging society. At Northwestern Health Sciences University, six standardized geriatric patients were trained to present complex cases in order to (1) identify case management skills of a group of preclinical students and (2) plan curricular changes (Paul Osterbauer and Katie Burns-Ryan, Table 3).

POSTGRADUATE CLINICAL TRAINING

Martin Wangler, Director of Academic Affairs, European Academy of Chiropractic (EAC), Switzerland, and Charmaine Korporaal, Head of Department, Department of Chiropractic and Somatology, Durban University of Technology, South Africa, presented reasons for the extra clinical year as proposed in Europe and South Africa and described structure, difficulties, and benefits experienced (Table 2). Dr. Wangler described in detail the process leading to the development of the EAC Model Curriculum for the graduate education programs (GEP) in Europe. It is a significant development that the 19 members of the European Chiropractors' Union (ECU) agreed in principle to adopt nine quality standards for GEP providers, a crucial first step toward a required postgraduate year. In South Africa, the model is similar, with a required postgraduate year, centrally administered by the Allied Health Professions Council as a separate and distinct clinical requirement, outside of the institutional education program. Charmaine Korporaal discussed the important role of the postgraduate year in preparing chiropractors to enter private practice.

The 2-year postgraduate assistantship program in Switzerland, coordinated by the Swiss Academy for Chiropractic, is recognized by the Swiss Federal Government and recently underwent a government accreditation process under the same conditions and requirements applied to any postgraduate specialty in medicine. As evidenced by the recent job analysis study done in 2009, chiropractors in Switzerland

have a high percentage of patients on direct referral from various medical specialists, and thus they see more acute patients as compared to chiropractors in the United States and the United Kingdom. The high level of postgraduate education and the interdisciplinary nature of this education have most likely contributed to better interprofessional communication and understanding and, therefore, improved collaboration in patient care. Coordinating and overseeing the 2-year postgraduate program is much easier in a small country such as Switzerland as compared to North America, but current educational methods make this feasible even in large countries. The benefits for the profession and patients cannot be underestimated (Cynthia Peterson, Table 4).

Murphy et al. agree that the postgraduate clinical year is something that is overdue in the chiropractic profession in the United States. There will be challenges to instituting this process, particularly in making it a standard part of chiropractic education, but the authors believe that these challenges can be overcome and the benefits to the chiropractic profession and the patients it serves will be worth the effort needed to make it happen (Donald Murphy, Stephen Perle, and William Defoyd, Table 4).

A clinician-based teaching model was implemented during undergraduate chiropractic education in 2009 at the University of Québec à Trois-Rivières, resulting in increased confidence in various clinical skills in a subgroup of interns. Long-term assessments of clinical competencies are needed to confirm the potential benefits of this teaching model. The study also highlighted the importance of clinicians' full commitment during such an important educational shift in the clinical training of new

Table 4. Postgraduate clinical year, continuing professional development (CPD), and specialty training

Postgraduate Clinical Year	CPD: Priorities, Methods, and Role in Maintaining Clinical Competencies	Specialty Training: Preliminary Review of Its Current Status in Chiropractic
• Cynthia Peterson. The Two- Year Post-Graduate Assistantship Program in Switzerland. Swiss Academy for Chiropractic, Bern, Switzerland • Donald R. Murphy, Stephen M. Perle, and William Defoyd. A Postgraduate Clinical Year: The Importance of Residency Training for Chiropractors. New York Chiropractic College, Seneca Falls, NY • Julie O'Shaughnessy, Kindah Haddad, Jessy Thériault, and Martin Descarreaux. Clinical Training in Chiropractic: Implementation of a ''Clinical-Based'' Curriculum. Université du Québec à Trois-Rivières, Canada • Thomas F. Bergmann. Faculty Practice Plans in Chiropractic Education Revisited: The Mentorship Model, Northwestern Health Sciences University, Bloomington, MN	• Martin Wangler. Workshop Best and Safe Care: Systemic Analysis of Potential Critical Incidents in Daily Chiropractic Practice (Pilot Study). European Academy of Chiropractic, Switzerland • Dennis Richards. Relating to the World of Practice: Aligning the Roles of Lifelong Learning and Continuing Professional Development with the Techniques Practiced by Chiropractors. Chiropractors' Association of Australia • Tammy de Koekkoek. Continuing Professional Development Requirements for Chiropractors in European Countries. Private Practice, The Netherlands	• Lise Lothe. Proposals for Specialty Training in Europe. European Academy of Chiropractic, Norway

interns (Julie O'Shaughnessy, Kindah Haddad, Jessy Thériault, and Martin Descarreaux, Table 4).

The development of chiropractic faculty or clinician-led practice plans can significantly enhance the academic mission of an institution by providing a solid and diverse patient base for teaching and research, while also providing financial support. The institution should make every effort to have those faculty doctors of chiropractic who are interested in providing patient care do so in the teaching clinics (Thomas Bergman, Table 4).

CONTINUING PROFESSIONAL DEVELOPMENT: PRIORITIES, METHODS, AND ROLE IN MAINTAINING CLINICAL COMPETENCIES

Jennifer Bolton (Table 2) reviewed continuing education (CE) or continuing professional development (CPD) requirements in different countries; methods included the use of new technology and the role of CPD/CE in maintaining clinical competencies. She emphasized the point that, despite regulated requirements for CPD, the biggest challenge for lifelong learners is "finding the motivation and striking the balance between confidence and doubt." Clearly this process must begin early in chiropractic training programs. Haymo Thiel (Table 2), Vice-Principal and Associate Professor, Anglo-European College of Chiropractic, United Kingdom, presented the concept of patient safety and a European model for reporting and learning from adverse events. He also described and elaborated on the European Guidelines for Chiropractic Incident Reporting and Learning Systems. This is a complex issue but there is a professional acceptance of the need for standards for identifying, reporting, and learning from adverse events. The discussion following this presentation highlighted such challenges as professional agreement on what constitutes an adverse effect or clinical incident.

Although safety guidelines can be effective in bringing about change and improving health outcomes, they are just one element of good decision making. Others are patient preferences and values, clinician values and experience, and the availability of resources, reported Martin Wangler of the EAC. Leadership, commitment, and communication, together with trust and openness to build a culture of patient safety, are prerequisites for successful reporting and learning. The Department of Academic Affairs of the EAC offered an interactive and practice-based workshop for participants of the ECU Convention 2010 to become acquainted with an error and risk analysis tool adapted from the "London Protocol." Beside the specific learning outcomes, the workshop tried to introduce the concept of the seven roles of a chiropractor in daily practice (ie, working as an expert, communicator, collaborator, health advocate, manager, scholar, and professional). Presenting aspects of the issue "best and safe care" in a professional sound way, discussing and reflecting on its content, and incorporating feedback from colleagues and experts provides a chance to grow professionally (Martin Wangler, Table 4).

Most educational institutions teach a core "package" of techniques, often based on the Diversified technique. Some teach only this, while others offer varying amounts of additional techniques, either as part of their core package or as electives. Selected samples of technique curricula from various chiropractic colleges, comparing their content with profiles of the techniques that chiropractors report practicing in several countries, were presented. Given the discrepancy between what some colleges offer in the area of technique and what many chiropractors actually practice, consideration should be given to wider incorporation of the teaching of commonly used techniques into the undergraduate/preprofessional core or elective curricula and CPD/CE offerings of chiropractic colleges (Dennis Richards, Table 4).

A survey conducted among 11 European nations concerning continuing education requirements and enforcement procedures reports that associations have varying criteria for allocating CPD points to a course or seminar. Several countries expressed interest in the EAC's initiative to provide point allocation for submitted courses or seminars. Self-directed learning was emphasized in the British response and many North American sources provide credit for online education programs. Only a few European national associations have a designated officer in charge of CPD. There is a call from respondents for more harmonization of requirements throughout the profession (Tammy de Koekkoek, Table 4).

William Meeker (Table 2), President, Palmer College of Chiropractic, West Campus, San Jose, California, responded to the question, "Is a postgraduate clinical year valuable and/or feasible in North America?" He understood the value of such a year but explained why it was not feasible as a

requirement for all students now. In the United States there are approximately 2000 graduates each year at present. Practical issues include an uneven flow of graduates during the year, unavailability of DC mentors, and the requirements of numerous different state laws. Some of the experiences available to Europeans in the postgraduate clinical year are available to 13th-quarter students at Palmer West who devote 25 hours per week for 10 weeks to clinical skills in external clinics, such as Veterans' Administration Health Centers, and business management. Jean Moss, President, Canadian Memorial Chiropractic College (CMCC), Toronto, Ontario, Canade, described a variety of external clinics for CMCC students. Dr. Carl Cleveland III, President, Cleveland Chiropractic College, Kansas City, Missouri, and Los Angeles, California, identified the practical issue that students who graduate from chiropractic programs in the United States have already completed 7 years of postsecondary education, as opposed to 4 or 5 in Europe and South Africa.

Dr. Juan Sanchez, Director of External Programs, Parker College of Chiropractic, Dallas, Texas, and formerly Director, Chiropractic Program Universidad Estatal Del Valle de Ecatepec (UNEVE), Mexico City, explained how UNEVE graduates had a postgraduate clinical year on salary in public hospitals, which gave them broader clinical and interdisciplinary experience and satisfied a social service requirement for licensure.

SPECIALTY TRAINING: PRELIMINARY REVIEW OF ITS CURRENT STATUS IN CHIROPRACTIC

Lise Lothe (Table 2), Chair, EAC Working Group on Specialty Training, presented the current status of chiropractic postgraduate specialty training in Europe. A panel discussion between (1) Renee Devries, Dean, College of Chiropractic, and Director, Radiology Consultation Services, Northwestern Health Sciences University (United States); (2) Sharyn Eaton, Head, Department of Health and Chiropractic, Macquarie University (Australia); (3) Ricardo Fujikawa, DC, MD, Head of Chiropractic Studies, RCU Maria Cristina (Spain); and (4) Joyce Miller, Senior Clinic Tutor, Infant and Child Practice, Anglo-European College of Chiropractic (United Kingdom), discussed the question, "Should a master's degree be a minimum requirement for a recognized chiropractic specialist qualification?"

It was agreed that specialty training required both an academic achievement, which might be a master's degree, as well as an advanced level of clinical competence that needed to be assessed in clinical exams set by an independent examining board.

INTERDISCIPLINARY CLINICAL TRAINING AND INTERPROFESSIONAL EDUCATION

Henrik Hein Lauridsen (Table 2), Director of Studies, Institute of Sports and Clinical Biomechanics, University of Southern Denmark, talked about the importance, benefits, and challenges of interdisciplinary clinical training in a university environment based on the chiropractic program at the University of Southern Denmark. This program is based on the two-cycle Bologna model, with a 3-year bachelor degree followed by a 2-year master degree and a 1-year postgraduate internship. During the last year of the master degree, students participate in multidisciplinary teams at the hospital-based Back Center of Southern Denmark (BCSD). BCSD is a large multidisciplinary center with about 50,000 patient visits per year. This clinical year entails a multistaged modular program in which students participate in the care of complex patients (called secondary sector patients). Following this year, students enter a postgraduate internship in which they primarily care for the more typical chiropractic patients (called first sector patients). This model is unique and considered a valuable method of training chiropractic students to be team players on hospital-based multidisciplinary teams.

Deborah Kopansky-Giles (Table 2) of CMCC and St. Michael's Hospital, a teaching hospital of the University of Toronto, describes significant advances in Canada in recent years of interprofessional education (IPE). This represents initiatives whereby students of different professions learn with, from, and about each other. The World Health Organization has a framework for action on interprofessional education and collaboration. The University of Toronto has led the way for IPE in Canada where there are now government requirements that all graduates have credits in IPE. CMCC students are in leadership positions at the Center for Interprofessional Education at the University of Toronto and have been instrumental in the development of student-led IPE programs and interdisciplinary social programs. The United Kingdom led the way in this field, but all

universities offering health professional programs in Canada are moving toward formal IPE.

IPE was addressed in a letter from the World Congress of Chiropractic Students to all participants of this year's education conference in Madrid with the request for stating the importance of interprofessional education and collaboration for all chiropractic programs during this conference. Collaborative practice strengthens health systems and improves health outcomes by creating access and coordination of health services, utilizing appropriate use of specialist clinical resources, and health outcomes for people with chronic diseases.[2]

As described by Cynthia Peterson of the University of Zurich, chiropractors returning to Switzerland from their studies in North America and other countries must complete a 2-year assistantship program as well as a 4-month, full-time rotation through orthopedics and rheumatology as an "under-assistant" in a hospital setting in Switzerland before they are allowed to sit for their final specialty examination allowing independent practice. Specific feedback from assistants completing these rotations indicates that they further improved their report-writing abilities and found it very beneficial not only to scrub into surgery, but also to participate in the preoperative and postoperative consultations in order to better understand which patients are surgical candidates and which patients are not. The rheumatology rotation enlightened the assistants about dealing with chronic pain patients and made them realize that the rheumatologists can not help everyone. It also highlighted "yellow flags" in patients who were more likely to become chronic pain patients and further developed their knowledge about medication (Cynthia Peterson, Table 5). A study, done at CMCC, described the development and evaluation of a new outcome measure developed to evaluate health professional collaborative competency. The Health Professional Collaborative Competency Scale (HPCCS) had good face and content validity, was

Table 5. Presentations on faculty and clinical training

Interprofessional Education, Collaboration, And Practice	Clinical Education: Faculty Development–Challenges and Solutions Concerning Teacher Training
• Cynthia Peterson. The 4-Month Orthopaedics and Rheumatology Under-Assistantship Requirement: Part of the Inter-Professional Post-Graduate Education in Switzerland. Swiss Academy for Chiropractic, Bern, Switzerland	• Louise Delagran, Michele Maiers, and Roni Evans. Lessons Learned from an Online Faculty Development Program. Northwestern Health Sciences University, Bloomington, MN
• Deborah Kopansky-Giles. Development and Evaluation of the Health Professional Collaborative Competency Scale. Canadian Memorial Chiropractic College, Toronto, Ontario, Canada	• Cynthia Long, Dana J. Lawrence, John S. Stites, and William Meeker. Evidence-Based Clinical Practice: Developing Faculty, Developing the Profession. Palmer Center for Chiropractic Research and Palmer College of Chiropractic, Davenport, IA, and San Jose, CA
• Judith Peranson and Deborah Kopansky-Giles. Teaching an Interprofessional Approach to the Management of Musculoskeletal Problems in Primary Care: A Pilot Study. St. Michael's Hospital and CMCC, Canada	• David Peterson and Ron LeFebvre. Preparing Clinical Faculty to Teach and to Model Evidence-Based Practice: The UWS College of Chiropractic Experience. University of Western States College of Chiropractic, Portland, OR
• Kim Humphreys. Interprofessional Education: Chiropractic Medicine at the University of Zürich. University of Zuürich, Switzerland	• Monique Baucham, Gregory Page, Mike Raper, Douglas Sanford, Lisa Speaks, Lawrence Stolar, and Kenneth Thomas. Clinic Faculty Development, Parker College of Chiropractic, Dallas, TX
• Mary Berg. Collaboration in Practice at Pillsbury House: An Integration Effort Between Northwestern Health Sciences University and Several Other Schools of Higher Education. Northwestern Health Sciences University, Bloomington, MN	

highly responsive to detecting change in interprofessional confidence, and was sensitive to overall group change. The instrument also had strong stability over time. The HPCCS appears to be a valid, reliable, and responsive instrument for evaluating health professional learners' perception of their collaborative competency and may be used as part of an evaluative strategy in the delivery of interprofessional education (Deborah Kopansky-Giles, Table 5).

Another study was done on clinician-teachers, participating in a pilot implementation of a 4-day modular program on the interprofessional (IP) management of musculoskeletal issues in primary care to determine effective facilitation strategies used by a mixed professional group of educators for enabling the acquisition of collaborative competencies by a mixed group of health science learners. The facilitator group possessed a depth of experience in IP practice and IPE teaching with good understanding of IPE concepts. The facilitators identified the importance of a champion role for IPE programs and described personal learning benefits from working on and in teaching modules with respect to their own teaching and IP clinical skills. There was a range of learning and teaching styles identified but a consensus that IP concepts are best taught through IP role modeling. There was a very high level of satisfaction with program delivery and a general perception that students increased their collaborative skills, but variable perceptions regarding whether students' knowledge of musculoskeletal disorders was enhanced (Judith Peranson and Deborah Kopansky-Giles, Table 5).

The Chiropractic Medicine program in the Faculty of Medicine at the University of Zürich is a new and exciting interprofessional educational development. It offers the possibility to address traditional barriers such as philosophical differences, professional bias and prejudice, and lack of knowledge and clinical experience between chiropractic, traditional medicine, and other health care professionals. The first cycle of 3 years leads to the Bachelor of Medicine degree followed by the 3-year Master of Chiropractic Medicine degree (Kim Humphreys, Table 5).

Pillsbury House Integrated Health Clinic (PHIHC) brings together medical, complementary, and alternative health care practitioners to serve the unique health needs of south Minneapolis. PHIHC is a totally unique environment in which supervised student interns from a variety of health care fields—including chiropractic interns from the Northwestern Health Sciences University—are able to work side by side to provide services to underserved populations to whom these services would otherwise not be available. The clinic creates an open atmosphere in which novice practitioners learn to appreciate their differences and similarities in treatments, as well as build relationships for appropriate referral for their future patients. The collaborative environment allows each specialty an equal and important voice in determining a course of treatment (Mary Berg, Table 5). The care model at PHIHC is unique, in that a group of students, drawn from six professions (medicine, nursing, chiropractic, acupuncture, massage therapy, and psychology)—called an ICU (Integrated Care Unit, typically consisting of two to three students)—examines each patient together. Decision making is collaborative and nonhierarchical and, to date, feedback from students, supervisors, and patients has all been extremely positive.

FACULTY DEVELOPMENT: TEACHER TRAINING

Michael Wiles (Table 2), Provost and Vice President for Academic Affairs, Northwestern Health Sciences University, presented faculty requirements for clinical training from the perspective of a large established program, whereas Juan Sanchez (Table 1) and Charmaine Korporaal (Table 2) presented perspectives from small established programs.

Dr. Wiles (Table 2) discussed the need for faculty developments programs to be comprehensive rather than sporadic or random. The program should respond to the needs of the institution and its faculty, and it should consider new faculty members, experienced faculty (at varying levels of skill development), leadership training, and organizational development.

Michele Maiers (Table 5), also from Northwestern, reported on the development of an online faculty development program that was funded by the National Institutes of Health (NIH). The aim of this project was to develop faculty skills to better interpret research literature, integrate evidence with clinical experience and patient preferences, and practice evidence-based health care (EBH). The long-term goal is to engage faculty to incorporate EBH throughout curriculum and clinical training at the university, as well as provide innovative tools to model and teach EBH. The ADDIE (Analysis, Design, Development, Implementation, Evaluation)

process was useful for identifying an effective instructional solution and ensuring the successful development of online instructional strategies. Online modules and forum discussions have proven effective for teaching EBH in the context of a faculty development program (Louise Delagran, Michelle Maiers, and Roni Evans, Table 5).

Palmer College of Chiropractic also received NIH funding to develop an evidence-based practice (EBP) curriculum and Cynthia Long reported on the faculty development program that was part of this project. Although the DC curriculum at Palmer has required courses in information literacy and evidence-based chiropractic practice (EBCP), it believes weaving EBCP concepts and practices throughout the curriculum and clinical rotation experience will prepare graduates to consider EBCP as integral to successful chiropractic practice. With strong support and commitment from its institutional leadership, Palmer College has invested in providing the training, resources, and environment needed for faculty to incorporate evidence-based clinical practice principles and concepts into their classroom and clinical teaching (Cynthia Long, Dana Lawrence, John Stites, and William Meeker).

In the fall of 2006 the University of the Western States College of Chiropractic received a federally funded grant aimed at improving the skills of its graduates. The opportunities provided by this educational grant have significantly increased faculty EBP awareness and skills. Their ability to both model and teach EBP principles and skills has increased significantly. EBP application in the clinics continues to have less penetration than desired. The underling training has been delivered and efforts to reinvigorate the application to case conferences and patient care continue (David Peterson and Ron LeFebvre, Table 5). Faculty development is generally reactive in nature. However, the most successful faculty development programs identify needs and develop methods for effectively meeting those needs.

QUALITY ASSURANCE IN HIGHER EDUCATION

Quality assurance in higher education is a necessity to ensure the provision of education and training to high standards. Quality assurance in higher education takes many forms including university-based validation and professional accreditation. For chiropractic education in Europe, the Council on Chiropractic Education–Europe (ECCE) awards international accreditation. The ECCE, following consultation with its primary stakeholders, took the decision in 2007 to apply for European Association for Quality Assurance in Higher Education (ENQA) membership. A self-study report by ECCE was submitted in October 2007, and in December 2007, ECCE was awarded candidate status with ENQA. For an agency used to reviewing others, it came as something of a shock to have to reflect on its own practices; for an agency used to asking institutions to prepare self-study reports, it was a new experience to have to compile its own; for an agency used to being in the driving seat at evaluation visits, it was a somewhat uncomfortable 2 days of sitting on the other side of the table. Taking a sip of one's own medicine was indeed a salutary but extremely worthwhile exercise. ECCE was accepted as a full member agency of ENQA in 2010 (Tim Raven, Table 2).

FINAL SESSION CONSENSUS STATEMENTS

On the first day of the conference, a panel of five members was approved by attendees and given the task of presenting draft consensus statements at the final session of the conference. The purpose of these statements was to summarize main themes and conclusions of the meeting, rather than attempt to cover and summarize all-important content. Panel members were Jean Moss (Chair), Charmaine Korporaal, Michael Wiles, Martin Wangler, and David Chapman-Smith (Secretary-General of World Federation of Chiropractic). During the last session, the draft consensus statements were presented, discussed, amended, and then approved. The approved consensus statements are the following:

1. **Purpose.** This meeting was convened to consider whether current clinical training in chiropractic education is meeting the demands of a new era in health care, in which all primary contact health care professionals face ongoing change and increasing challenges.
2. **Competencies for Collaborative Practice.** A central demand of this new era, which the chiropractic profession must satisfy, is demonstration of the clinical and professional competencies to practice in collaboration with other health care professions. This may be best accomplished within mainstream health care systems, to provide

a service that is accepted as necessary and valuable by patients and society.

3. **Further Development of Competencies.** To meet this demand the profession must further develop its clinical and professional competencies, including competencies in the following domains identified by the European Academy of Chiropractic[3,4]—expert performance, communication, collaboration, management, community performance, scholarship, and professionalism.
4. **Clinical Training Methods.** With respect to clinical training, the new era in health care provides opportunities for innovation. Methods of clinical training that were discussed as beneficial include a) clinician-based training; b) clinics in a variety of community- and hospital-based settings, especially those having collaborative and interprofessional practice; and c) a structured postgraduate clinical year prior to independent practice as implemented in Europe and South Africa.
5. **Interprofessional Education.** With respect to preparation for practice in collaboration with other health professionals, interprofessional education (IPE) should be an important component of clinical training in all chiropractic programs. IPE occurs when students from two or more professions learn about, with, and from each other.
6. **Lifelong Learning.** With respect to the changing knowledge base in health care, there is a need for all practitioners to adopt the habit of lifelong learning. Chiropractic education must foster the practice of critical reflection. It should be commenced from the beginning of the program. The habit should be reinforced in graduate and continuing professional development programs and may be enhanced through the use of portfolios.
7. **Faculty Development.** With respect to faculty development in the area of clinical training, this should occur in a structured program. An emphasis within such a program should be further developing the practice and teaching of evidence-based health care. This model is patient-centered and prepares graduates for interdisciplinary practice by giving them a common language with other health care professionals.
8. **Continuing Professional Development/Continuing Education.** With respect to effective continuing professional development (CPD), it should include a reflective process, which results in changes to practice that improve patient care. There should be a systematic approach utilizing a variety of different methods and including self-assessments and external assessments.

See the conference proceedings for detailed information on the above matters and other important areas of clinical training discussed, including assessment and specialty training. Print and DVD electronic copies of the proceedings of the conference are available from the World Federation of Chiropractic and inquiries should be addressed to info@wfc.org.

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